

### **REMARKS**

In the August 6, 2008 Office Action, claims 2-4, 7, 9-12, 14-16, 19, 21-23, 25 and 26 stand rejected in view of prior art. On the other hand, claims 8, 20, 27 and 28 were indicated as allowed. Claims 2-4, 7, 9, 14, 19, 21 and 23 also were rejected for failing to comply with the written description requirement. No other objections or rejections were made in the Office Action. Applicant wishes to thank the Examiner for the indication of allowable subject matter and the thorough examination of this application.

### ***Status of Claims and Amendments***

In response to the August 6, 2008 Office Action, Applicant has amended claims 2, 4, 7, 9, 14, 16, 19, 21 and 23 as indicated above. Thus, claims 2-4, 7-12, 14-16, 19-23 and 25-28 are pending, with claims 2, 4, 7-9, 14, 16, 19-21, 23, 27 and 28 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

### ***Interview Summary***

On October 21, 2008, the undersigned conducted a telephonic interview with Examiner Erick Glass who is in charge of the above-identified patent application, and his Supervisor, Walter Benson. Applicant wishes to thank Examiners Glass and Benson for the opportunity to discuss the above-identified patent application during the Interview of October 21, 2008.

With respect to the 35 U.S.C. §112, first paragraph rejection, the undersigned argued that "varying motor output torque periodically" is supported by the original disclosure at page 16, lines 19-20 and page 18, line 5 through page 19, line 17, even if not stated verbatim in the specification. Agreement was not reached. Rather, Examiner Glass agreed to further consider the rejection upon formal submission of arguments. Examiner Glass suggested the claims be amended to include language more closely corresponding to the language of the specification, or amending the specification to include the language of the claims (without introducing any new matter). Applicant thanks Examiner Glass for the suggestions.

With respect to the prior art rejection, the undersigned argued that column 3, lines 18-26 of U.S. Patent No. 6,422,331 (Ochiai et al.) has no relation to suppressing rotational speed

*variations* of a motor or to suppressing of torque *variations*. Agreement was not reached. Rather, Examiner Glass agreed to further consider the rejection upon formal submission of arguments.

### ***Claim Rejections - 35 U.S.C. §112***

On page 2 of the Office Action, claims 2-4, 7, 9, 14, 19, 21 and 23 were rejected under 35 U.S.C. §112, first paragraph. Specifically, the Office Action indicated that “varying motor output torque periodically” fails to comply with the written description requirement. In response, Applicant has amended claims 2, 4, 7, 9, 14, 16, 19, 21 and 23 to read “varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor”, which is clearly supported by page 18, line 1 and page 18, lines 13-15. Applicant believes that the claims now comply with 35 U.S.C. §112, first paragraph. Accordingly, withdrawal of this rejection is respectfully requested.

### ***Rejections - 35 U.S.C. § 103***

On pages 2-10 of the Office Action, claims 2-4, 7, 9-12, 14-16, 19, 21-23, 25 and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,646,411 (Hirono et al.) in view of U.S. Patent No. 6,422,331 (Ochiai et al.). In response, Applicants have amended independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23 as mentioned above. These rejections are respectfully traversed based on the following arguments, especially in view of the amendments to independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23.

Independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23 now require, *inter alia*, “varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor”. The Office Action acknowledges that the Hirono et al. patent does not specifically speak of the torque values. The Office Action asserts that the Ochiai et al. patent teaches varying motor output torque periodically (column 3, lines 18-26). However, neither of these references discloses or suggests *varying motor output torque in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor*, as now required by independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23. Thus, even if combined as suggested in the Office Action, this hypothetical combination cannot result in the unique arrangements of independent claims 2, 4, 7, 9, 14, 16,

19, 21 and 23. Accordingly, withdrawal of this rejection of these independent claims is respectfully requested.

Moreover, dependent claims 3, 10-12, 15, 22, 25 and 26 are also allowable over the prior art of record in that they depend from these independent claims, and therefore are allowable for the reasons stated above. Also, dependent claims 3, 10-12, 15, 22, 25 and 26 are further allowable because they include additional limitations. Thus, Applicant believes that since the prior art of record does not render obvious the independent claims, neither does the prior art render obvious these dependent claims.

#### Additional Arguments

Referring to column 3, lines 18-26 of Ochiai et al, a control signal is output to operate the motor so as to adjust an existing value of the motor torque to match a demanded value of the motor torque (steps S69-S72). Referring to steps S65-68 described at column 13, lines 12-41, the technique indicated in steps S65-68 is for decreasing torque to zero and safely ending the control of the motor 2, **not** for suppressing the **variation** of the rotational torque.

Moreover, the description of column 3, lines 18-26 of the Ochiai et al. patent only explains the steps s65-s68 described in column 13, lines 12-41 in short. These steps only refer to safely ending of the control of the motor 2 by decreasing torque to zero, and do **not** refer to ***suppressing of torque variations***.

Additionally, with respect to independent claims 4, 7, 16 and 19, the limitation of the claims “decreasing an amplitude of an output torque ***variation*** of the motor” is lacking from the hypothetical combination of the Hirono patent and the Ochiai et al. patent.

With respect to independent claim 9, the Office Action points out that Hirono et al. discloses detecting or estimating load (column 2, lines 1-2) and suppressing rotational speed variations of the motor except when the load is smaller than a predetermined value (column 5, lines 20-27). However, the Hirono et al. patent refers to an action when the load is smaller than a predetermined value, and does not refer to any other action. Furthermore, the Hirono et al. patent does not disclose or suggest suppressing of rotational speed ***variations*** of motor. Rather, at best, the Hirono et al. patent’s disclosure may teach avoiding overload condition according to values of phase current. Thus, the Hirono et al. patent does not indicate ***suppressing of rotational speed variations of a motor***. In other words, while the description on decelerating by a negative acceleration with the suppression flag set may indicate a limitation of speed, this is different from a suppression of rotational speed **variations**.

With respect to claims 25 and 26, the Office Action points out that the Ochiai et al. patent discloses controlling at least one of the voltage and current of the inverter (column 2, lines 1-20) accompanied with a decrease of an amplitude (column 3, lines 18-26) of an output torque variation of the motor. As mentioned above, has no relation to suppressing rotational speed *variations* of a motor or to suppressing of torque *variations*.

While the Office Action alleges that the Hirono et al. patent discloses suppressing of rotational speed variations of motor in column 3, lines 15-55. However, this section of Hirono et al.'s disclosure explains about calculating of rotational velocity and acceleration based on the counter-electromotive force, detecting the phase current and accelerating/decelerating according to the phase current. In other words, this disclosure in the Hirono et al. patent does not suggest acceleration/deceleration for speed *variations* of the motor that results from the periodic load, as required by the claims.

*Allowable Subject Matter*

On page 11 of the Office Action, claims 8, 20, 27 and 28 were indicated as allowed. Applicant wishes to thank the Examiner for this indication of allowable subject matter.

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In view of the foregoing amendment and comments, Applicant respectfully asserts that claims 2-4, 7-12, 14-16, 19-23 and 25-28 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

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